

Quantifying integration quality using feedback on mapping results

Conference Paper · December 2017 *with* 5 Reads

DOI: 10.1145/3151759.3151763

Conference: Conference: the 19th International Conference

Cite this publication



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Abstract

Traditional data integration delivers high integration quality but requires significant upfront effort because of the need for expensive experts to be involved. The pay-as-you-go approach to data integration aims to reduce this effort by relying on a bootstrap phase where algorithms replace experts in identifying or validating source-to-target semantic correspondences and executable mappings. Since the results of this phase are expected to be of lower quality, a continuous improvement phase is then launched where user feedback is collected and assimilated in order to improve the integration. It is crucial, therefore, to quantify integration quality. This paper presents a solution to this problem using feedback on mapping results as evidence. We contribute a methodology for quantifying integration quality while taking into account the inherent uncertainty of user feedback. The approach is evaluated in synthetic and real-world integration scenarios and shown to accurately and cost-effectively quantify their quality as a conditional probability.